

III. CONTRIBUTIONS TO THE FAUNA OF  
YUNNAN BASED ON COLLECTIONS  
MADE BY J. COGGIN BROWN, B.Sc.,  
1909 — 1910.

PART II.—FISHES.

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The fishes collected by Mr. J. Coggin Brown in Yunnan and its neighbourhood belong to the sub-orders Ostariophysi and Percesoces. Some of them are reported for the first time from the Province and four are believed to be new to science. For want of sufficient preserving fluid and bottles Mr. Coggin Brown had to put a large portion of his collection in local Chinese spirit in ill-fitting Chinese vases and pots, with the result that, notwithstanding all his care and trouble, a considerable number of the specimens arrived here in a condition unfit for identification. Nineteen different species have, however, been identified and are enumerated below. The report being supplemented with the descriptions of the four new species.

Fam. CYPRINIDAE.

Sub-fam. CYPRININAE.

1. *Cyprinus hybiscoides*, Richards.

Günther, *Catal.*, vii, p. 27.

*Hab.*—Lake Tali Fu, 7,000 ft., Yunnan.

Reported from China, Amoy, Formosa, Japan and Java.

2. *Cyprinus fossicola* (Gray).

Günther, *Catal.*, vii, p. 28.

*Hab.*—Yungpê Lake, Yunnan.

Some female specimens with matured ova; month of collection June.

Reported from China.

3. *Carassius auratus* (L.).

Günther, *Catal.*, vii, p. 32.

*Hab.*—Lake Tali Fu, 7,000 ft., and Yung-chang Fu, Yunnan.

A very large number, mostly damaged.

China is the home of the gold carp.

4. *Schizothorax progastus* (McClell.).

McClell., *Ind. Cypr.*, pp. 274, 343, pl. 40, fig. 4.

*Hab.*—Lake Tali Fu, Yunnan.

One female specimen (damaged).

Reported from the Himalayas, from the headwaters of the Ganges to Sadiya in Upper Assam. This species has not been before reported from Yunnan; but Yunnan is separated only by the district of Kachin (Upper Burma) from the mountainous districts of Upper Assam whence the species was first reported.

5. *Labeo yunnanensis*, sp. nov.

(Plate i, figs. 1, 1a, 1b.)

Br. iii; D. III 11; P. 17; V. 9; A. II 5; C. 19; L.1. 43.

Length of head  $4\frac{1}{2}$ , height of body  $3\frac{1}{2}$ , length of middle (shortest) rays of the caudal fin  $12\frac{1}{2}$  and outer (longest) rays nearly 4, and the length of caudal peduncle (the distance between the posterior root of anal fin and the middle of the root of caudal) is contained 4 times in the total length.

*Shape.*—Dorsal profile almost a straight line from the end of snout to the nape except for two slight concavities, one just above the snout and the other a little behind the orbit. From the neck to the anterior root of dorsal fin the profile is highly convex, from the anterior root of the dorsal fin to the root of the caudal the profile is concave the concavity being very deep over a black blotch on the middle of the caudal peduncle. The ventral profile is almost a straight line from snout to cloaca, but from cloaca to caudal it is somewhat convex though the curvature has no correspondence to the concavity of the upper side.

*Snout.*—Short, compressed and rather pointed but not projecting beyond the jaws, the terminal portion mostly covered with tubercles.

*Barbels.*—None, but flat thin processes or flaps like stumps of barbels are found hanging inside at the angles of the mouth.

*Eyes.*—Adipose circular eyelids,  $3\frac{1}{2}$  diameters in the length of the head,  $1\frac{1}{2}$  diameters from the end of snout and little less than 2 apart. Interorbital space slightly convex.

*Lips.*—Loose in the mouth which is inferior, semioval and less than one-third in the length of the head; the inner double fold of the lip is cartilaginous. The upper lip is cut in edges.

*Teeth.*—Pharyngeal 5, 4, 2; 2, 4, 5. The size of an individual of the outermost row is  $1\frac{1}{2}$  of each of those in the middle row and double of each of the inmost row.

*Air-bladder.*—Thick and large, divided into two unequal chambers by a constriction, the anterior being the shorter and much the broader of the two.

*Fins.*—The dorsal arises three scales anterior to the vertical from the ventral, and twenty-two scales behind the nape and much

nearer to the snout than to the root of the caudal. The middle rays of the dorsal being abruptly short, the upper free portion of the fin is deeply concave. The pectoral is thin and tapering and is shorter than the distance between the roots of pectoral and ventral by two scales. The ventral fin has an appendant, the anterior rays of the anal fin are very long, hence the free margin is deeply concave behind. Caudal deeply lobed.

*Lateral line.*—Five rows of scales between the lateral line and the dorsal fin and seven rows between the lateral line and the ventral fin. The lateral line runs straight from the superior corner of the gill-cleft to the middle point of the beginning of the caudal peduncle where it bends upward and, following the curvature of the ventral side from this point, ends in the middle point of the root of the caudal fin.

*Colour.*—The upper portion, *i.e.*, from one scale above the lateral line, is steel-grey, below immaculate silver. A large black blotch on the caudal peduncle extending over seven scales of which three scales are on the lateral line (from the fourth to sixth scales counting from the caudal end), two scales above and two scales below it. The membranes between fin-rays are finely dotted with black points, hence the fins appear grey with the edges of a deeper shade.

*Hab.*—Lake Tali Fu, Yunnan.

One adult specimen measuring 158 mm. in length (including length of caudal fin).

This is the first time that a *Labeo* is reported from Yunnan. The new species resembles in some particulars *L. dyochilus* (reported from the Himalayas, Sikkim and Assam), *L. pangusia* (reported from the Himalayan ranges, Sind, Deccan, U. Provinces, Bengal and Assam), *L. rohita* (Sind, Punjab to Assam, and Burma), *L. diplostomus* (Sind Hills, Himalayas and Assam) and *L. potail* (Poonah to Tungabhadra and Deccan) from all of which it differs in having no barbels, in the shape of body, in proportions, shape of fins, lateral line, number of scales, etc., and from most of which it differs in the number of pharyngeal teeth, size and position of the eye, shape of snout and lip, number of fin-rays, etc.

#### 6. *Barbus stigma* (Cuv. and Val.).

Cuv. and Val., *Hist. Nat. Poiss.*, xvii, p. 93, pl. 489.

*Hab.*—Bhamo, Upper Burma.

Reported from Sind, throughout India, and Burma as high as Mandalay.

#### 7. *Barbus chola* (Ham. Buch.).

Günther, *Catal.*, vii, pp. 143-144.

*Hab.*—Bhamo, Upper Burma.

Reported from Madras, Orissa, the Punjab, Bengal, U. P. and Central Provinces, Assam and Akyab (Burma) to Mergui.

8. *Barbus cogginii*, sp. nov.

(Plate i, fig. 2.)

Br. iv; D. III 6-8; P. 15; V. 9; A. II 5; C. 17; L.l. 39-40;  
L.tr.  $6\frac{1}{2}/4\frac{1}{2}$ .

Length of head  $3\frac{3}{5}$  to  $3\frac{4}{5}$ , height of body  $3\frac{2}{3}$  to  $3\frac{1}{3}$ , length of middle (shortest) rays of caudal fin 9 and outer (longest) rays  $4\frac{3}{5}$  times in the total length. Length of caudal peduncle little less than 4 times in the total length. Height of head  $1\frac{1}{2}$  times and width of head  $1\frac{4}{5}$  times in the length of head.

*Shape*.—From snout to some distance behind the nape the dorsal profile is almost a straight line from which point it is convex up to second dorsal spine which occupies the highest point, from this point it slopes down in a gentle concave curve to be continuous with the upper outermost ray of the caudal fin. The ventral profile is almost a straight line with a slight convexity at the root of the ventral fin, whence it curves up suddenly and continues again as a straight line to the base of the caudal peduncle.

*Snout*.—Depressed, with a pointed ridge in front. It is entirely free from pores and tubercles.

*Barbels*.—4; 2 rostral, slightly shorter than the diameter of eye and contained  $1\frac{2}{5}$  times in the length of the maxillary and  $4\frac{1}{3}$  in the length of head, and 2 maxillary, contained 3 times in the length of head. The rostrals reach the anterior one-third of the eye, whereas the maxillaries reach the hind edge of the orbit.

*Eyes*.—Comparatively large,  $3\frac{1}{3}$  diameters in the length of head, 1 diameter from end of snout and 1 apart. Interorbital space flat.

*Mouth*.—Anterior, terminal, protractile and curved. Upper jaw slightly projecting, the angle of the lower jaw is pointed, with a tubercle which fits into the angle of the upper jaw. The opening of the mouth ends considerably anterior to the vertical from the anterior orbit, the distance being greater than half the diameter of the eye.

*Teeth*.—Pharyngeal 4, 3, 2; 2, 3, 4. The outer are larger.

*Fins*.—The dorsal arises two scales behind the vertical from the anterior root of the ventral, has about 21 scales in front and is nearer to the root of the caudal than the end of the snout. The third spinous ray is serrated posteriorly with 28 serrations, the terminal one being slightly hooked; this spine is shorter than the length of head; the rest of the rays are shorter the further they are from the spine; the free edge of the fin is thus concave outward. The pectoral reaches above the ventral by one or two scales and the lower free margin is slightly concave. There are twelve rows of scales between the anterior roots of ventral and anal; the length of ventral is less than the intervening space. There are  $3\frac{1}{2}$  scales between the root of the ventral and the lateral line

and 10 rows of scales from the posterior root of anal fin to the inferior terminal ray of the caudal. The second ray of the anal is ossified and the outer free margin of the fin is concave, that of the ventral being slightly convex.

*Lateral line.*—Commencing on the superior corner of the gill-cleft it drops down gradually through eight rows of scales to above the end of pectoral fin from which point it almost runs as a straight line to end at the middle point of the root of the caudal fin. There are three and a half rows of scales between the lateral line and the ventral fin and six and a half rows between the lateral line and the anterior root of the dorsal. In the caudal peduncle there are generally eight rows of scales, four rows above and three rows below the row in which the lateral organs are situated.

*Colour.*—Upper one-third including head brownish, the rest silvery. Fins pale yellow, the ventral being of a slightly deeper colour. The ends of rays of dorsal and caudal slightly touched with grey. In some there is a circular deep brownish or golden ring in the middle of the eyelid. The barbels are brown.

*Hab.*—Lake Tali Fu, 7,000 ft., Yunnan. Four full-grown specimens: F.  $\frac{46.8.0}{1}$  is a mature female, 102 mm. in length with caudal; F.  $\frac{46.8.2}{1}$ , female big in roe, 154 mm., total length with caudal; F.  $\frac{46.8.5}{1}$ , total length 133 mm. (damaged); and F.  $\frac{46.8.6}{1}$  is a female big in roe, 148 mm., with caudal (figured).

The new species differs considerably from the two others of the same genus described from Yunnan, *i.e.*, *B. grahami*, Regan, and *B. yunnanensis*, Regan, and also from *B. oatesii*, Blgr., and *B. compressus*, Blgr., of the Shan States. It has some resemblance, however, to *Barbus clavatus* (McClelland) from Sikhim, which is very imperfectly described from a single specimen known, and also to *Barbus margarianus*, Day, from the Nampoung river in the Kakhyen Hills (Bhamo), but from each of these it differs in a good many important particulars some of which are detailed below:—Length of head in the total length is  $6\frac{1}{4}$  in *B. margarianus*,  $4\frac{2}{5}$  in *B. yunnanensis*,  $3\frac{3}{4}$  in *B. grahami* and  $3\frac{2}{5}$  in *B. clavatus*, while it is  $3\frac{3}{5}$  to  $3\frac{4}{5}$  in the new species. Length of snout in the diameter of eye is 2 in *B. grahami*,  $1\frac{2}{3}$  in *B. yunnanensis*,  $1\frac{1}{4}$  in *B. margarianus*, while it is only 1 in the new species. Two pairs of barbels are equal in length in *Barbus clavatus* but in all other species mentioned above, including the new species, they are unequal, the anterior pair being  $\frac{2}{3}$  of head in *B. grahami*,  $\frac{1}{5}$  in *B. yunnanensis* and nearly  $\frac{1}{4}$  of head in the new species. In *B. clavatus* the snout is covered with thorny tubercles, and in *B. margarianus* there are large open pores on the front and sides of the snout, while that of the new species is exceptionally smooth. In *B. clavatus* none of the anal rays are prolonged but in the new species the anterior rays are longer than the posterior rays. In *B. margarianus* the abdominal profile is more convex than that of the back, in the new species the abdominal profile is almost a straight line. The mouth is anterior and terminal in the new species, whereas it is subterminal both in *B. grahami* and *B. yunnanensis*.

9. *Rasbora daniconius* (Ham. Buch.).

Günther, *Catal.*, vii, p. 194.

Two young specimens.

*Hab.*—Bhamo, Upper Burma.

10. *Rohtee cotio* (Ham. Buch.).

Day, *Fish. India*, p. 587, pl. cli, fig. 1.

*Hab.*—Bhamo, Upper Burma.

11. *Barilius polylepis*, Regan.

*Ann. Mag. Nat. Hist.* (7), vol. xiii, p. 191.

*Hab.*—Panhaitzu Lake, Lake Tali Fu and Yungpêting Lake, Yunnan.

Sub-fam. COBITIDINÆ.

12. *Misgurnus anguillicaudatus* (Cantor).

Günther, *Catal.*, vii, p. 345.

*Hab.*—Lake Tali Fu, 7,000 ft., Yunnan.

Full-grown specimens. In some numerous raised black spots like "pearl-organs" were observed. They were caught about spawning time.

13. *Nemachilus pleurotaenia*, Regan.

*Ann. Mag. Nat. Hist.* (7), vol. xiii, p. 192.

Some very young specimens.

*Hab.*—Lake Tali Fu, Yunnan.

14. *Nemachilus salmonides*, sp. nov.

(Plate i, figs. 3, 3a.)

Br. iii; D. III 8; P. 13; V. 10; A. I 5; C. 16.

Length of head 4, height of body  $3\frac{1}{2}$ , length of middle caudal rays  $5\frac{3}{4}$ , length of terminal caudal rays  $4\frac{3}{4}$ , and the distance of cloacal opening from the root of caudal  $3\frac{3}{8}$  in the total length.

*Shape.*—Dorsal profile in anterior two-thirds gently convex with the anterior root of the dorsal as the highest point. In the posterior third the dorsal profile is almost a straight line. The ventral profile of the head and chest is highly convex down to the root of pectoral fin from which it is gently convex to the root of the caudal.

*Eyes.*— $4\frac{3}{8}$  diameters in the length of head,  $1\frac{3}{8}$  in the length of the snout and  $1\frac{1}{2}$  apart. The interorbital space is slightly convex which is further altered by two narrow ridges that run from behind the nares to the posterior margin of the head. The length of the snout is contained  $1\frac{2}{5}$  times in the postorbital length of the head.

*Barbels.*—6 in all, 4 rostral and 2 maxillary. The maxillary barbels are the longest, being half as long as the head and twice as long as the inner rostral. The outer rostrals are just intermediate in length between the maxillary and inner rostral.

*Lips.*—Upper fleshy and thick. The lower lobulated, being broken up into several fleshy protuberances in two series. The opening of the mouth, which is inferior, is deeply crescentic; the corners are fleshy and thick.

*Fins.*—The anterior root of the dorsal is slightly in advance of the vertical from the anterior root of the ventral. It is also equidistant from the posterior edge of the orbit and the root of the caudal. A few of the last rays being slightly longer than those immediately in front the outer contour of the fin, which is otherwise deeply convex, looks pointed at the end preceded by a notch. The pectoral extending  $\frac{2}{7}$  of the distance from its base to origin of ventral. The free end of the ventral is triangular and the fin is two-thirds of the distance between the origin of ventral and the anterior root of anal. The free end of the anal is rather truncated and the depth of the caudal peduncle is contained  $1\frac{1}{5}$  times in the distance between the posterior root of the anal and the root of the caudal fin. The outer margin of the caudal is concave, the middle rays being  $\frac{2}{5}$  of the outermost rays.

*Scales.*—Minute and not imbricate. Thorax and abdomen covered with scales.

*Lateral line.*—Incomplete, the perforated scales with lateral organs are noticed only in 25 scales in the anterior part of the body and the lateral line stops 12 or 13 rows of scales in front of the vertical from the anterior root of the dorsal fin.

*Colour.*—Head, body and fins dirty brown with marbled markings in black all over the body. These marbled markings appear to be irregular transverse bands arranged in a vertical series from behind the operculum and running to the root of caudal. Most of the bands are broken up in the middle except a few over and behind the pectoral fin. The anterior bands are generally shorter and thinner than those behind. The margin of the caudal fin is slightly darker.

In colour as well as in shape this species has some superficial resemblance to a young trout.

*Hab.*—Mongpan, Southern Yunnan.

A single specimen 56 mm. in length (including caudal fin).

The new species resembles in some characters two other *Nemachili* reported from Yunnan but from each of these it differs in a good many important particulars some of which are stated below:—Depth of body of *N. pleurotaenia*, Regan, is 5 and of *N. nigromaculatus*, Regan,  $4-4\frac{1}{4}$ , whereas in the new species it is only  $3\frac{1}{2}$ ; in *N. pleurotaenia* the snout is as long as the postorbital part of the head, in the new species the length of the snout is contained  $1\frac{2}{3}$  times in the postorbital part of the head. In *N. pleurotaenia* the interorbital distance is 1 diameter of the eye, in the new species it is  $1\frac{1}{2}$  diameters. The length of the maxillary

barbel is contained twice in the length of the head in *N. pleurotaenia*, three times in *N. nigromaculatus*, but in the new species only  $1\frac{1}{5}$  times. Scales in *N. pleurotaenia* are minute and thorax naked, in *N. nigromaculatus* scales are very small, not imbricate, and both thorax and abdomen naked, in the new species the scales are minute and not imbricate but both the thorax and abdomen are covered with scales. In *N. nigromaculatus* the lateral line is altogether absent, in the new species it is present but incomplete. In *N. pleurotaenia* the anterior root of the dorsal fin is equidistant from the anterior nares and the root of caudal, in *N. nigromaculatus*, from middle of eye and base of caudal, whereas in the new species it is equidistant from the posterior edge of the orbit and the root of caudal.

## Fam. SILURIDAE.

## Sub-fam. BAGRINAE.

15. *Macrones seenghala* (Sykes).

Day, *Fish. India*, p. 444, pl. xcix, fig. 1.

*Hab.*—Lake Tali Fu, Yunnan.

This species has not been before this reported from Yunnan, nor from Burma. It is found all over India including Upper Assam.

16. *Macrones cavasius* (Ham. Buch.).

Günther, *Catal.*, v, p. 76.

*Hab.*—Bhamo, Upper Burma.

17. *Macrones pulcher*, sp. nov.

(Plate i, fig. 4.)

Br. vi; D. I 7; P. 9; V. 6; A. II 10; C. 17.

Length of head  $3-3\frac{3}{5}$ , height of body  $3\frac{4}{5}$ , length of middle caudal rays 9, length of terminal caudal rays  $3\frac{4}{5}$ , the distance of cloacal opening from the root of caudal fin  $2\frac{3}{5}$  and the length of the base of adipose dorsal fin 3 times in the total length (without caudal).

*Shape.*—The limiting line of the snout meets the line from the root of the dorsal spine in front over the eyes in an obtuse angle. From the point of attachment of the dorsal spine, which is the highest point in the profile, it slopes down to the anterior root of the adipose dorsal from which point it continues almost in a straight line to the root of the caudal. The ventral profile is a convex curve from the lower jaw to the anterior root of the anal fin from which point it is concave.

*Eyes.*— $3\frac{4}{5}-4\frac{1}{3}$  diameters in the length of head,  $1\frac{1}{5}$  to  $1\frac{2}{5}$  diameters in the length of snout and  $1\frac{1}{4}$  to  $1\frac{1}{5}$  in the interorbital distance; length of snout 3 times and the interorbital distance  $2\frac{1}{2}$  times in the length of head.



*Barbels.*—8 in number, nasal about  $\frac{1}{3}$  of the length of head; maxillary pair reach beyond the posterior root of the anal fin; outer mandibular pair reach the end of pectoral spine and the inner mandibular barbels reach half the length of pectoral spine.

*Mouth.*—Anterior, terminal and transverse; the upper jaw being slightly longer. The width of the mouth is contained  $2\frac{1}{2}$  times in the length of head. Teeth villiform in both jaws, arranged in series.

*Osseous plates.*—Upper surface of the head entirely covered with a granulated bony plate having three processes; the occipital process is twice as long as broad and meets the blunt process of the bony plate which forms the base of the dorsal spine; the other two broad lateral processes terminate half-way in front of the anterior black blotch. There is a bony ridge on each side bounding the posterior margin of the gill-openings; these bony ridges appear to terminate in a pointed bony plate on each side wedged between the pectoral spine and the anterior black blotch, which conceals the thin membrane stretched in front of the end of the air-bladder. All the osseous plates are granulated. The median longitudinal groove on the upper side of the head is soft, shallow and broad.

*Fins.*—The anterior dorsal fin commences just at the vertical from the posterior margin of the anterior black blotch behind the operculum. The dorsal spine is weak and is slightly larger than half the length of head and is minutely serrated on both sides—there being eight serrations on the posterior side, and those on the anterior side are still more minute. The middle rays of the dorsal fin being comparatively very long, the free margin of the fin is highly convex. The adipose dorsal is rather long, beginning from the point at which the last ray of the rayed dorsal would reach and ending beyond the end of the base of the anal; the distance between adipose dorsal and caudal is contained  $1\frac{1}{2}$  times in the distance between the posterior edge of the base of anal and the caudal; the length of the base of the adipose dorsal is  $1\frac{1}{5}$  in the length of head. Its height gradually increases backwards and the free end is pointed on the upper posterior edge. The greatest width of adipose dorsal is contained 7 times in the length of the base. The pectoral spine is stronger and longer than the dorsal spine in which the denticulations on the inner side are very strong and are about ten in number, the serrations on the outer margin being very weak. The length of the rays is smaller as they proceed inwards causing the outline of free margin to appear convex. The free margin of the anal fin is slightly concave. The middle rays of the ventral fin are long enough to reach the anterior root of the anal. The two limbs of the bilobed caudal fin are of equal length.

*Lateral line.*—There is a series of minute openings of lateral organs from above the opening of the gill-cleft, which bends round the anterior black blotch to the middle of the fish and then continues in a straight line to disappear in the posterior black blotch placed about the middle of the caudal peduncle.

*Air-bladder*.—An oval-shaped free sac not enclosed in a bony capsule, but lying superior to the heart and extending posteriorly: it is lodged under a flat osseous roof and is in direct contact on the two lateral sides with the stretched thin membranes, concealed as it were by the anterior black blotches behind the gill-clefts—suggesting some connection with the production and transmission of sound.

*Colour*.—Dorsal and upper part of the body dark brown, with lighter or paler whitish brown stripes: one median, from the tip of the snout to the base of the dorsal spine, and two lateral longitudinal on each side, one above and the other below the middle line, which is distinguished by being dotted black for the openings of the lateral organs. The upper of the two lateral longitudinal stripes is the darker of the two. There are on each side two large, conspicuous and intensely black circular blotches considerably larger than the eyes, one behind the gill-cleft covering and thereby concealing the thin membranous skin of the body where the air-bladder is in direct contact with the membranous leathery covering and thus with the outside water, and the other about the middle of the caudal peduncle, being separated from the root of the caudal fin by a thin white band that runs along the root. The ventral side of the body is coloured dirty silver; the lips, mandibular barbels, and the thin band at the root of the caudal are all white, the nasal and the maxillary barbels blackish brown, adipose dorsal dark brown and the dorsal, anal and caudal fins are brownish with black spots on the membranes between the rays.

There are altogether four specimens measuring from 60 to 67 mm. (including caudal fin), all collected in the district of Bhamo close to the Yunnan border. This new species differs in proportions, coloration, etc., from *Macrones medianalis*, Regan, reported from Yunnan, and also from *Macrones bleekeri* and *M. blythii*, reported among other places from Burma also. To these the new species has some superficial resemblance. The principal differences are summarised in the following table:—

	<i>M. medianalis.</i>	<i>M. bleekeri.</i>	<i>M. blythii.</i>	<i>M. pulcher.</i>
Length of head in total length .. ..	$3\frac{1}{4}$ — $4\frac{1}{8}$	$5\frac{1}{4}$ — $5\frac{1}{2}$	5	$3\frac{1}{2}$ — $3\frac{3}{8}$
Height of body in the total length .. ..	$5\frac{1}{4}$ — $5\frac{1}{2}$	5	5	$3\frac{4}{5}$
Length of head in diameter of eye .. ..	5 — $6\frac{2}{3}$	$4\frac{1}{2}$	$3\frac{1}{2}$	$3\frac{1}{3}$ — $4\frac{1}{3}$
Length of dorsal spine in the length of head ..	$1\frac{1}{3}$ — $1\frac{1}{2}$	2	Little less than 2	$1\frac{2}{3}$

Besides the above differences, among others the new species differs from *M. bleekeri* in having the length of the base of the adipose dorsal  $1\frac{1}{3}$  in the length of head, whereas in *M. bleekeri* it is 2, and in having both the lobes of the caudal fin equal, whereas in *M. bleekeri* the superior lobe of the caudal fin is much longer than the inferior lobe.

## Fam. OPHIOCEPHALIDAE.

18. *Ophiocephalus gachua*, Ham Buch.

Günther, *Catal.*, iii, pp. 471-72.

*Hab.*—Tashuichai and Tali Fu Lakes, Yunnan; Bhamo, Upper Burma.

In some Bhamo specimens the ventral fins are not banded but immaculate and white. Reported for the first time from Yunnan.

19. *Ophiocephalus punctatus*, Bloch.

Günther, *Catal.*, iii, pp. 469-70.

*Hab.*—Tali Fu Lake, Yunnan.

The ventral fins are irregularly banded.

Reported for the first time from Yunnan.

LIST OF MEMOIRS ON FISHES FROM YUNNAN AND ITS  
NEIGHBOURHOOD.

- I. Anatomical and Zoological Researches: Yunnan Expeditions, 1868 and 1875. By J. Anderson, M.D., Superintendent, Indian Museum. 2 vols. Published in 1878.
- II. "On a collection of Fishes made by Mr. John Graham at Yunnan Fu." By C. Tate Regan, B.A. (*Ann. Mag. Nat. Hist.* (7), vol. xiii, pp. 190-194). 1904.
- III. "Descriptions of two new Cyprinid Fishes from Yunnan Fu." By C. Tate Regan, B.A. (*Ann. Mag. Nat. Hist.* (7), vol. xiv, pp. 416-17). 1904.
- IV. "Descriptions of two new Cyprinid Fishes from Yunnan Fu, collected by Mr. John Graham." By C. Tate Regan, B.A. (*Ann. Mag. Nat. Hist.* (7), vol. xvii, pp. 332-33). 1906.
- V. "Descriptions of three new Fishes from Yunnan, collected by Mr. J. Graham." By C. Tate Regan, B.A. (*Ann. Mag. Nat. Hist.* (7), vol. xix, pp. 63-64). 1907.

LIST OF FISHES ALREADY REPORTED FROM THE PROVINCE OF  
YUNNAN AND ITS IMMEDIATE NEIGHBOURHOOD.

1. *Notopterus kapingat*, Lacep.
2. *Cyprinus micristius*, Regan.
3. „ *carpio*, L.
4. *Carassius auratus* (L.).
5. *Orcinus richardsonii*, Gray and Hardw.
6. „ *grahami*, Regan.
7. *Schizothorax taliensis*, Regan.
8. *Discognathus yunnanensis*, Regan.
9. *Labeo calbasu* (Ham. Buch.).
10. „ *gonius* (Ham. Buch.).